S:Cooper E-4 (no date) 1946 SG4 Araucanians SG4

late as 1873; on the mainland well into the present century in small quantities (Bullock, 1911, p. 28). 241

There is no report of manioc or tomatoes being cultivated by any of the *Araucanians*. The sweet potato was cultivated a little in the northern *Picunche* region, from Quillota north, but not by any of the *Mapuche-Huilliche*, so far as our records go.

Cultivation in open glades or with clearing through burning (Bullock, 1911, pp. 25–28) was the prevalent system. Generally, land was left fallow 1 to 3 or more years after one season's planting (Bullock, 1911, pp. 31–32; Latcham, 1936, pp. 220–21). Garden plots were sometimes fenced (Guicciardo, 1882, p. 98), more often unfenced. Beans were often planted in the same field with maize, the maize stalks serving as bean poles. Irrigation was used north of the Rio Rapel, but there is no documentary or archeological evidence of its use south thereof (Latcham, 1928 a, p. 139), where rainfall was greater and more evenly distributed the year round. No terracing was done south of the Choapa (Latcham, 1928 a, p. 135). Manuring was apparently not practised. 242

The chief gardening implements used to break ground and to loosen and lift the clods were: an oar- or shovel-shaped implement of wood; a wooden three-pronged or tridentlike "pitchfork," sometimes with a perforated stone at the upper end of the handle to weight it (Rosenstan, 1882, p. 192); a pole (used in pairs in Chiloé) pointed at one end and rounded at the other, the worker leaning his body weight at chest or stomach on the rounded end. For making holes to sow maize, beans, and potatoes and for digging out potatoes, a pointed wooden implement served as dibble and digging stick. 241

By far the greater part of the gardening labor fell to the women. They did the sowing and weeding. The more strenuous work involved in first breaking ground was done by the men.

Planting and harvesting were done on the communal or mingaco system, at least for maize. A man who wished to break ground and plant maize, invited the members of his community or parcialidad, men and women, to come with their implements, on a given day. The men would break the ground, the women following behind them, making holes with their dibbles, putting three or four kernels of maize in each hole, and treading down the earth over the hole. The planting over, all repaired to the man's house for an abundant meal with plenty of chicha (Moesbach, 1936, pp. 136–42). A similar procedure—invitation, communal labor, food and drink—was followed in harvesting and threshing wheat, and seemingly in other harvesting. The threshing of the wheat was done by men and women trampling the ears in a quasi-dance and at the same time singing to the music of trumpet, flutes, and drum. In more recent time threshing with use of horses came in. 243 47

10: Hilger E-5 (1946-1952) 1957
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[1] Informants and interpreters: 1, A Coloripe family. (Note outdoor fireplace.) 2, Sister Gerson, an interpreter, and an Alapin informant. 3, Francisca Prussendorf, an interpreter (left); and Margaret Mendioch, field assistant (right). Young women in center wipsenwipp wheat. (Coloripe.)

[P 92(A)]

19: Hilger E-5 (1946-1952) 1957
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●243

[Hrl]

Harvesting: 1, Children cutting grain with sickle (Cobarrúbias). 2, Loading grain onto ox-cart (Cobarrúbias). 3, A lila (inward-in area) in which grain is threshed by trampling horses (Alegría).

[p. 172 (B)]

10: Bilgae E-3 (1948-1952) 1957
RG4 Accession RG4
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Each family had enough parched grain of the harvest so that there was an added dish served in the Magnolia country then: it was like a stew, he said, but its gob was not so heavy as a dumpling. They pulled off the ears of the grain by hand, collected them in the pails, folded the pails, and each man carried pails of them home, along across his shoulder. They collected heads of the wheat in the same way in those days, and we sometimes collect it in the same manner today."

A seventy-odd girl in Colhaique collected wheat by this method while I was there. Her family's small stored wheat supply had been depleted, and the grain in the fields was not ready to be harvested—only unripened ears had ripened. The girl walked through the wheat field (pl. 47, 1), grasped a few ripened ears here and a few there with each hand (little finger toward the earth), broke the ears off the stalk, and when a hand could hold no more, dropped them into a basket which she was carrying on her arm. When the basket was nearly full, she straddled the handle and pushed the ears down with both feet, and when it could hold no more, she walked home. There she poured a portion of the ears into a wooden dish, placed the dish on the ground close to a tree trunk, stepped on the grain, supporting herself by clutching the ends of two branches on the trunk of a tree, and threshed the grain with her feet (pl. 47, 2). Threshing grain in this manner is called hoeihipen. The movements of her feet, used alternately for probably three movements, were quick and somewhat rhythmic. With each movement she brought the ears of grain into the middle of the dish by means of her toes and the side of the foot. "When my mother hoeihipen, she sings a song; I don't know the words, but I can hum the melody." And she did. After some time she emptied the wooden dish into a winnowing tray, shook the tray, and then by brushing the surface with her hand sorted out ears that were not completely threshed. Such ears she threw back into the wooden dish to be threshed. The kernels she poured into a basket (pl. 47, 3). She then threshed the remainder of the ears. The threshing of the entire harvest was completed in three installments. Next she walked into an open space to winnow the kernels—a place evidently used for that purpose, for chaff and dry pea shells were lying about. She had barely begun to winnow when small pigs came to eat the refuse. Noticing the direction of the wind, she sat on a log with her back toward it, poured kernels into the winnowing tray, and threw with intriguing skill she shook the kernels simultaneously up and down, forward and back, and from side to side, focusing her eyes on the farther edge of the tray where the kernels began to collect as they separated from the chaff. When a goodly number had collected there,

10: Hilger E-S (1946-1952) 1957
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they began to move backward along the edge of both sides of the tray. While the kernels were thus on the move, the wind removed the chaff. Occasionally the girl halted to throw off ears that turned up, and to stir the kernels with her hands to find more. When chaff and ears had been removed from all, she poured the kernels into a basket and walked back to the ruka to prepare them for the family's midday meal. (Cf. pp. 216-219 for the preparation of them.) Threshing and winnowing took 40 minutes.

Today, every family that has a right to own land in an area raises wheat on one or several pieces of it, either on burnt-over land or in natural glades. These differ in size and shape (pls. 1; 35, 1 and 2). No informant knew how much land he had under cultivation. Pointing out his fields, he might say, "I believe I have about two dareas here, and one over there. Darea is a word we got from the Chilenos, and is used only at harvest time. It is a piece of land, the amount of grain on which approximates what a man can cut by hand in a day. We use it only when hiring a man to help us." A woman listening in interjected, "If one hurries a little, two dareas can be cut in one day." "In this area [Collaripe] a darea is a piece of land approximately 80 meters square." A Boroa man stretched an arm, and noted that from his chest to the tip of his hand approximated a vara, and added, "I think a darea is 70 by 50 varas. In our area, because of the contour of the land, a darea is usually longer than it is wide." Fields are not fertilized, but are allowed to lie fallow for one or two years.

Agricultural implements formerly used, according to Gunkel, were a wooden pick (chapefi) made either of luma or temu, a wooden spade, and perforated stones (cutancura). (Cf. Gunkel, 1944, pp. 315-321 for complete description.) Cutancura were used in smashing lumps of earth turned up with pick or spade. Although metal hoes and spades have replaced the wooden ones, all three wooden implements were seen during the present study, and were being used in gardening. Fields were being plowed with plows drawn by oxen (pl. 34). There were a few plows with an iron share; all others had wooden shares. Neighbors borrowed plows from each other.

Wheat was the only small grain I saw cultivated. Seeding is done by hand. If a man does not have sufficient seed, another will arrange with him for the amount he needs, in which case the harvest is shared, in accordance with an old custom. In Boroa area, "if one man furnishes the land and another the seed, each receives half of the harvest; if each furnishes half the seed, and one the land, each also receives half the harvest." In Collaripe, while I was there, one man furnished

10: Hilger E-5 (1946-1952) 1957
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● 243 the land and another did the seeding; each furnished two sacks of wheat, that is, half of the seed needed. "And today we harvested the grain, six sacks in all—a profit of one sack for each of us. It is a poor harvest." Another informant owned land but no oxen and no seed. He had to give up his oxen as payment on a mortgage. A neighbor plowed the land and furnished the seed. Both men together seeded the land, and together they harvested it. Each got one-half of the harvest. When I asked a man if his wife seeded the land that belonged to her, he answered somewhat indignantly, "The land may [342] belong to her, but after all she does not rule over it; the man does that!"

Fields and gardens, it is believed by many, should be planted when the moon is waxing. "It is the only time that the moon has strength." If rain interferes when the moon is waxing, planting should then be done between the first quarter and full moon; never at full moon, new moon, or when there is no moon.

Complaints were made in all areas against small green-colored parrots (choroy, yewihua) that come in large flocks, practically every year, immediately after the wheat has been planted, and do much damage by pecking the kernels from the soil. Small children are sent to run back and forth in the fields to keep the parrots on the wing. "Finally the parrots get angry, give much back talk and fly away," said a little girl, quite amused.

Wheat, in the early days, was harvested by plucking the ears by hand, as previously described. Today it is cut with an iron sickle secured in a wooden handle. The spread of the opening of a sickle, observed in use in Cotaripe area, was 7 inches; the handle 5 inches in length. The cutting edge of the blade had been serrated with a knife and was kept keen with a porous stone of volcanic origin found in the area.

The one who cuts the wheat grasps a half dozen stalks, more or less, with one hand a little below the ear (with little finger toward the earth), applies the sickle about 6 inches below the little finger, bends the stalks over the sickle away from the body, pulls the sickle toward the body, cuts the ears off, and lays them to the side, on stubbles. When enough grain has been cut to fill two outstretched arms, someone passes along, piles it up, and carries it by armfuls to an oxcart (pl. 35, *1*, *2*). This is done if the grain is thoroughly ripe; if it is not thoroughly ripe, and there is no rain forecast, it may be cut one day and hauled away the following. All members of the family, including small children, assist in harvesting. Anyone having a right to a share in the harvest of a particular field will assist in the reaping.

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Araucanian hired to help is paid in either Chilean money or in wheat. 243
For cutting a durun, a hired man was being paid 30 pesos (one U.S. [165
dollar) in 1946, or 3½ almudes of wheat—a standard almud (a box [104]
used in measuring) holds approximately 7 to 8 kilograms, or 0.8 of a liter. "We have no Mapuche word for almud; this manner of paying we learned from the Chileans."

Most wheat today is threshed in the traditional way, by being 243
trampled upon (huiñiñun) either by human beings, or by horses on 533
hilly ground. Children aged 9 and 10 were permitted to help tramp. Tramping is done to the rhythm of one of several songs. An informant demonstrated by shuffling his feet two steps forward and three steps backward, and then taking a long step forward to get off the wave he had just been stepping on, and onto the others, and singing, "Beat, my feet! You and the jilguero (bird) break these ribs." He added, "The jilguero walks like I showed you the men that are threshing do; that bird does not hop."

In Alepún area, threshing is still done in the traditional communal 243
way in which neighbors assist one another. Each family brings its loads of grain by cart to the customary place, usually on a knoll. Here is the lla, a circular area enclosed by a fence (pl. 35, *f*), where the threshing is done by horses. Connected with the lla there is usually another fenced-in area in which the horses are rested. Threshing is done in the following manner: The wheat is laid with heads of grain toward the center, and horses—as many as 19—are then brought in from the adjoining enclosure. One is ridden by a man who drives the horses round and round, keeping them close to the fence. "He must not let them trample on the heads of the grain for fear of crushing the kernels." Then abruptly he swings the horse he is riding about-face and drives all the other horses in the opposite direction. He repeats this procedure several times and then drives the horses back into their enclosure, as they cannot stand this maneuver around too long. While the horses are resting—they may be given four such rest periods in a day—the men sweep the kernels together with branches of brush or shrubbery, "like we use to sweep at home." Handfuls of the kernels are then thrown into the air to let the wind remove the chaff. The chaff-free kernels are taken home and stored in the ruka—today in cloth sacks, formerly in sacks made of hide. Before the wheat is used as food, it is again winnowed. Each family takes its turn at the lla. When the threshing is finished, all families participate in the traditional abundant meal, including an oversupply of chicha.

In Cofaripe area, where threshing is done by Chileans with a steam-

10: Hilger E-3 (1946-1952) 1957
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●243 propelled threshing machine, the grain must be cut with longer stalks. A Collaripe man, five of his children, ranging from 4 to 11 years in age, and a 76-year-old relative were observed harvesting a field (February 23, 1947) which had been sown by the father and the relatives for equal shares at harvest time. The grain was cut very early in the day by the older persons. At about 10 o'clock, all seven persons were in the field. All but the father collected the grain into piles; each tied his pile together with either a cord or a trarilwe (woven belt) and carried it to the cart, the small children and a 13-year-old girl carrying their bundles on the head, the old relative and a 21-year-old girl, on the shoulder. Taller persons threw their bundles onto the cart; the father reached for those of the shorter ones (pl. 8, *f*). The father, by hand, carefully placed each bundle with ears toward the middle of the cart, then untied the cord or trarilwe and dropped it on the ground to be used again. While waiting for bundles, he packed the ears on the cart by stepping on the middle of the stalks.

The father and the old relative took the load of grain to the threshing machine the following morning. After they had paid for the threshing (payment had to be in grain; money was not accepted) they netted 110 kilograms over the 80 kilograms planted in the field. Both men were depressed about the yield. They had observed that morning, while waiting at the threshing machine, that three combined cart loads from another valley in the Andes had produced more than 1,000 kilograms. Both men explained that the earth in Collaripe Valley had only a thin layer of black topsoil, that one needed to dig down only a very little distance to find the beginning of a great depth of pebbles of volcanic origin. "The tillable soil of our valley is tired," one said. "It will soon be difficult to raise even peas or beans in it." Since threshing is no longer a communal affair in Collaripe, the traditional festivity with a plentiful meal is no longer a part of the occasion.

244 Potatoes are a staple Araucanian food. Every family plants a good-sized patch of them. Where there are two sheepfolds, these are used in alternate years for the planting. The entire family generally helps with this operation. The man, or a son old enough to know how, plows the soil, if the patch is located where this can be done, or spades it. He, his wife, and older boys and girls then hoe the ground into hills, in which the potatoes are planted. If no sheep corral is used, the smaller children of the family scamper across the pastures and collect cow and sheep manure and place some on each hill. Weeding during the growing season is usually done by the man or an older son.

A vegetable garden is an essential for every household. Vegetables include soybeans, cabbage, lettuce, peas, beans, carrots, multiple

10: Hilger E-5 (1946-1952) 1957
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Making mote from wheat (Cohiripe): 1, Collecting ears of wheat. 2, Threshing wheat with the feet. 3, Winnowing the kernels.

[p. 188(F)]

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221 233 thus lessened, and pastures near the homesteads can grow to maturity for winter grazing. Grazing in the higher valleys needs no lease, and therefore no payment has to be made. Many homesteads are completely closed for the duration of summer grazing; in an occasional household two persons, seldom three, are left to care for chickens and other fowl. In Quilaquina area on January 4 (1952) there was not a 4-footed animal to be seen, and most homesteads looked deserted. Each family, on return from summer grazing, brings with it as much hay as it can haul. This is stored for winter forage, usually in shack-like shelters.

231 556 Wealth, in the early days, consisted of sheep and cattle; in more recent times, of horses also. Old informants spoke of large herds belonging to their families formerly. These were owned by the father. Children owned no animals. The husband of a 70-year-old woman had owned more than 100 horses, 60 cows, and several hundred sheep. No one can lay claim to wealth today. Ownership of 4-footed animals is now restricted by the Government—apportionment is per family, not according to the size of the family. One of my informants owned 5 calves and a large number of turkeys, geese, ducks, and chickens; another, 3 pairs of oxen, 5 horses, and several sheep; another, "just enough sheep for our meat supply"; and still another, 4 oxen, 5 horses, 32 sheep, 13 geese, turkeys, and chickens. Several families were raising doves for food.

AGRICULTURE AND HORTICULTURE

243 Wheat (kachilla) and corn (tapolwa) were cultivated in the early days; wild quinoa and a species of wild barley (kawella) were collected. Today, wheat, barley (now called kawella), and oats (huinca kawella, barley of Whites) are raised by every family fortunate enough to have a glade or some cleared land. Dung of sheep and goats is utilized as fertilizer. In general, plowing is done with a wooden plow drawn by a pair of oxen (pl. 75, *1*). Men scatter seed by hand while walking across the fields.

Usually grain stored for winter use is consumed before ears of the newly planted grain have ripened. The first ripened ears of wheat are stripped off their stalks by hand, "as we used to strip off wild grain in the early days and all wheat before we had sickles," and are threshed in a basket with the feet, as formerly. At harvest time the grain is cut with a sickle and threshed by horses tramping on it in a fenced-in circular area, known as lila (pl. 75, *3*). If the lila is small, 5 or 6 horses do the tramping; if much larger, as many as 10 or 12 are used.

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The chaff is removed on a windy day by letting the wind blow through the kernels as they are slowly let fall off a spadelike wooden implement with which they are lifted off the ground. Before using the grain as food, it is winnowed on a winnowing tray or, if the family lacks one, in a pan or dish. 243

Non-Araucanian informants noted that horticulture probably had its beginning among the Araucanians with the introduction of the apple tree. The fact that there is no Araucanian word for apple—the Spanish word, manzana, is used—strengthens the belief. Today groves of wild apple trees (manzana silvestre), producing hard, sour apples, are found scattered throughout the Araucanian country, near creeks, rivers, and lakes, from Pulmari to San Martín de los Andes; single trees or three or four of them can often be seen at springs, probably locations of former homesteads (pl. 64, *3*). The southernmost grove is near Meliquina (close to lat. 41° S.); a forest of them is found near Lake Alumine (just north of lat. 39° S.). It is said that these cultivated groves and forests resulted from former cultivated ones, and that from their locations one can infer that in the days when settlements had to be accommodated to grazing lands, tolderías were erected nearby at harvest time. Groves of old trees already existed when informants were young. It is interesting to note that the araucaria (pl. 72, *3*) are found mainly between latitude 37° and 40° S., practically the same area in which the wild apple is found. 245 [177]

The personnel of the Intendencia de Parque Nacional de Lanín believe that some wild-apple trees are 300 years or more old. A casual sample felled in 1950 had 180 rings, "and it was not an old or very large tree." In general it is believed that Jesuit Fathers introduced the apple trees from Chile in the seventeenth century. Tree-ring dating might verify the time of introduction.

Today cultivated apple, peach, plum, and cherry trees are seen about many homes. Every family has a vegetable garden. Gardens are worked with hoes. Women plant the seeds by hand. Informants were raising potatoes, beans, peas, corn, cabbage, lettuce, garlic, and cilantro. Several women were also raising medicinal plants, most frequent among them, toronjil. There is a belief that wheat, potatoes, beans, and peas must be planted during the first quarter of the moon if a good harvest is desired; planting them at any other time will result in an abundance of leaves but a scanty yield. 244 [245] [249]

An occasional garden and field, today, is fenced in (pls. 64, *1*; 70, *2*; 78, *3*); many more need to be fenced to keep sheep and cattle out. More glades could be planted with wheat if they could be protected against grazing animals. Material for fences is difficult to obtain. 231 417

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decrease in productivity. In turn, of course, the poor output results in higher prices for seeds, flour, and other products.

The expenditure of labor needed to prepare the soil is not great. No exceptional traction is required, and generally a 20-centimeter depth of pulverization is sufficient. In effect, this means that disc plowing and other operations could be performed adequately with ox traction. The only exception to this occurs near the coast, where there are still large stands of trees.

For cereals, a field might receive from one to three plowings. *Chacarería*, especially potatoes, requires more effort; labor is performed with greater care. In red-clay soils, fields are prepared (*barbecho*) in August and September; in loamy soil preparation may take place in October, November, and even December. For the rest of the agricultural work, the season is largely optional, depending on weather conditions.

About 60 per cent of the arable land in Cautín Province is at present planted annually by machine. This indicates a great increase in the use of tractors and seeding equipment among the large landowners and those who depend upon them for the rental of farm equipment.

Of all crops grown, wheat is the most important and accounts for about three-fourths of the land cultivated annually. Winter wheat predominates over spring wheat in a ratio of 15:1. Winter varieties are planted in April-May and into July. About half the wheat is sown broadcast, and the quantity of seed used fluctuates between a maximum of about 180 kilograms per hectare to a minimum of 120. Returns per hectare vary between 6 and 25 metric quintals (a metric quintal equals 100 kilograms), averaging 10. The Mapuche tend to sow less seed per hectare (between 90 and 100 kilograms) and have sparser harvests.

Oats follow wheat in importance, their average yield being about 8 metric quintals per hectare. Barley and rye are also grown, with apparently favorable results in areas not well suited for wheat, but the amount is too small to have an appreciable effect on the trend in farm production.

Harvesting begins in the first half of January if the fields are dry. Oats are generally harvested first, wheat next along with linseed, and then lentils, peas, and potatoes. The season ends in May. More than 40 per cent of the cereal crop is harvested entirely by machine, the

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rest by combined machine and manual labor. Potato harvesting is completely manual.

Among *chacarería*, potatoes and peas are of greatest importance, potatoes being grown on about one-third of the area set aside for *chacarería* annually. For the three to five years preceding 1953, however, the province suffered from a severe potato blight (*tizón*) which greatly reduced output.

Depending on the topography, potatoes are cultivated in two ways. The hillsides and sloping ground are sown early (*tempranera*), while the lowlands, being more humid, are sown late (*tardía*). *Tempranera* takes place in August and on a limited scale; it is destined for immediate local consumption. *Tardía*, which is sown between October and December, forms part of the harvest that finds its way to the market with the rest of the national agricultural product.

Peas also account for about one-third of the land set aside for *chacarería* and, like potatoes, are sown *tempranera* and *tardía*. On the higher ground, wheat is generally sown in the same fields from which peas have been harvested. Among more technologically advanced Chileans, the land is fertilized before wheat is planted; but it is commonly thought that the mere change from peas to wheat is sufficient to insure adequate growth.

An estimated 14 per cent of the total agricultural land is given over to pasture during periods of fallow. This is the sort of grazing land called *pasto natural*. Total natural pasturage, including uncultivable land such as Andean valleys, woodlands, wet lowlands, and so forth, is about 640,000 hectares, or about a third of the area of Cautín Province. Only 180,000 hectares represent sown pasturage.

Improvement of pasturage is one of the more important problems facing Chilean farmers. The number of livestock is diminishing; erosion is ruining overgrazed fallow land which could be sown in grass or clover; soil depletion is limiting the quantity and quality of *pasto natural*. Furthermore, the availability of natural pasture varies seasonally. It is fairly abundant in spring and early summer, scarce in the dry part of summer and autumn, and almost nonexistent in some regions in winter. This type of pasture is able to support about five cows per hectare annually, according to government calculations which seem to be optimal. Meat and wool production is poor; mange is prevalent but neglected. All animals suffer from pests for which they receive inadequate treatment.

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used to tamp down the fields following the harrowing, but this is now somewhat rare.

Three plowings, widely spaced, followed by seeding and harrowing (and rolling) is the stated ideal to which various accommodations are made. This holds for the coastal, the central, and the Andean zones. The exigencies of weather, along with poor drainage, generally prevent the ideal pattern from being realized.

If a three-field system is adhered to, the initial preparation of *barbecho* may take place in the spring (October-November), when the soil is not too wet, and the second plowing is done in the immediate postharvest season (March), at which time sowing may take place. It is during March, especially, that land is also cleared of stubble and brush by burning. Fires may be seen over the countryside day and night. Sometimes these get out of control, causing damage to buildings and recently harvested crops. Indeed, stacks of chaff (*muelles de paja*) are often set afire purposely, rather than saved, since wheat chaff is considered inferior fodder.

For the most part, preplanting preparations are nearly completed by the middle of April, but because of early rains some planting has to be postponed until there is a temporary break in the weather. According to traditional belief, such a time comes late in June (around St. John's Day), and those farmers who failed to sow before the heavy rains came count heavily on this expectation. To a certain extent, the planting of spring wheat would forestall such a risk, but the practice is generally unknown to the Mapuche.

Wheat is the principal crop on most reservations and is sown in March, April, and May, depending on weather and soil conditions, and harvested in January and February. Oats are grown in a ratio of 1:6 to wheat. They are primarily a cash crop, not being valued as food by the Mapuche, and represent risk capital in a limited sense. If too much rain spoils the oat crop, reducing its commercial value, the harvest is used for winter fodder rather than sold. Oats and wheat, which contain large amounts of wild seeds, such as *arvejilla*, *yuyo*, *rébano*, and chicory, also have little commercial value and are withheld from market.

Some quinoa is grown in small amounts for the home manufacture of *mudai* (a beverage), and oca is raised, at least in the Andean foothills, where it serves as a substitute for potatoes. Melons, squash, and cucumbers, while grown locally, do not figure importantly in the in-

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ventory of *chacarería* on the reservations, but are sometimes raised by Chilean farmers. Within the last few years, some Mapuche near Temuco have begun to grow sunflowers in small amounts wholly for sale. Manure fertilizer is used to enrich the garden crops, but *chacarería* such as peas, beans, and potatoes are not fertilized if grown in large quantity in the fields.

Since 1949 the province has been suffering from a severe potato blight which has literally reduced to near starvation some of the reservation groups living in the coastal zone where potatoes are of great importance and once formed a major part of the diet. Mapuche living in the Central Valley, where wheat is the principal crop, have been less affected. In the Andean region, where the blight seems not to have been as devastating, and where oca is something of a substitute for potatoes, the blight's effects have not been very serious.

Harvesting techniques range from hand-sickle operations to combine harvesting. While the former is practiced by virtually every Mapuche farmer, at least for part of his crops, the latter practice is rarely encountered on the reservations. A combine is used only when provided by a Chilean farmer who is working in half-shares with an Indian. However, ox-drawn harvesters (*epicadoras*) are rather widely used in the Central Valley reservations. They are used primarily for harvesting wheat and are rented to individual Mapuche farmers by *fundo* owners or entrepreneurs who live in the towns. As the harvest operations get under way, harvesters tour the region outlying Temuco and other towns. They are rented for a percentage of the harvest, rather than for cash. Threshing machines are also made available to Mapuche under similar conditions.

There is a pronounced receptivity to "modern" farm machinery among the Mapuche. Although the rented equipment usually clears a field in a few hours at most, which otherwise would have taken an individual family several days to harvest by hand, the rental price seems out of proportion to the labor saved (and is often immediately regretted by the Mapuche), especially in view of the fact that the harvest returns may be as little as 3 or 4:1, as they were in both 1952 and 1953 in many parts of the reservation area. Indeed, returns are sometimes so small that family members scour a harvested field for spikes of wheat untouched by the machine and salvage grain left on the ground after the threshing machine moves to another part of the reservation. On three or four hectares of land, these gleanings may

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amount to a bushel of grain, which is considered sufficient return for the extra work. Had the field been hand-harvested, such loss would have been much reduced.

Hand harvesting is done with sickles. The sheaves are either tied and stacked at intervals or forked into stacks. After the field is cut, the stacks are loaded into oxcarts and either brought home for flailing or animal threshing, or taken to a threshing machine temporarily set up in the vicinity. Some of these manual operations are performed by every Mapuche farmer, even though part of the work may be done by machine. Crops which ripen early or late are often harvested by hand, because the machinery may not be available. Late crops, too, are generally those raised in the poorest, smallest, and most inaccessible fields that have no roads for the passage of large machines. In general, small harvests are reaped by hand and often by an individual family without assistance from neighbors. In the wheat belt of the Central Valley, oats, linseed, and barley are usually harvested in relatively small amounts, representing less than a fifth or sixth of the amount of wheat harvested. *Chacarería* in this zone is generally confined to small plots adjacent to the house, and is hand-harvested – most often by women, who also do the cultivating. In the coastal zone, however, peas and beans are substantial field crops and are often harvested by machine. If the harvest is small, though, they may also be flailed or animal-threshed.

It is difficult to estimate the relative importance of cattle and sheep in the Mapuche system of values. Both are highly esteemed, as much for the prestige involved in owning large herds as for actual commercial value and meat for home consumption. Considering the former aspect, ownership of cattle is perhaps more prestigeful, while owning many sheep assures a marketable product, produced with little care, and a more convenient source of meat for the household.

Sheep are eaten in quantity, but are also highly prized for their wool, which is both sold and used at home for the manufacture of clothing. They are shorn in the spring when their wool is long. At shearing, sheep are dipped in a commercial disinfectant or in a traditional product generally concocted from *canelo* water and other ingredients. The apparatus used for dipping is often no more than a hollow log. Mange is treated with salve and a commercial dip in some cases, but it is quite common for a mixture of *canelo* water and putrid human urine to be applied to the affected parts of the animal.

Oxen are in a class by themselves. They are the only draft animals

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241 In the Liumalla region yields are somewhat higher than in the
311 Central Valley reservations and many along the Pacific coast. A return
[493] of 5:1 is considered poor, 10:1 good, and 15:1 exceptional. Yields seem to range between 6 and 9:1 over a five-year period. While drainage is poor in the bottom lands, where water is held long after the rainy season, the hillsides and sloping fields, where wheat and oats
[34] are grown, suffer from extreme erosion owing to runoff of the heavy
[32] winter rains. Gullies form in the planted fields and a significant amount of the seed is washed away. There are many bare spots, consequently, when the fields are ready for harvesting. Contour plowing
[242] could do much to prevent this, but the equipment is unavailable to the Mapuche. Actually, terraces would have to be built in many places, if the hillsides continued to be planted in crops.

311 All the land in the Liumalla region was once heavily wooded.
313 There were great stands of timber not over a generation ago. The area was cleared during a lumber boom which occurred about twenty years ago, and which contributed to the prosperity of many Mapuche families in the general region between lakes Villarrica and Calafquén. Now there are innumerable dead, stripped trunks and stumps which are hazardous for cattle and vastly impede plowing and harvesting operations. These trunks and stumps are made into charcoal by a
[34] number of the Mapuche – an industry which is a welcome supplement to agriculture in the wooded areas of Araucanía.

243 Farming in this region is difficult because harvesters and plowing machines often cannot be used on the rough terrain. A good deal of the harvest is brought in by hand, although it may be machine-threshed provided the roads are passable and the people are able to cart their crops to a central threshing "depot" in town or on a nearby
132 *fundo*. Winter is generally severe in the area, with snow falling during
[731] the coldest months. In 1953, one of the most severe winters in many years, at least 20 per cent of the animals on Nahuelpan succumbed to exposure and starvation.

423 A similarly difficult year in 1948 precipitated the people's request
425 for *división*. The reservation had been without an effective chief for
[731] several years, and troubled times resulted in numerous quarrels over
622 matters that might have been resolved by the action of a strong chief.
[518] There were boundary disputes and fights over the condition of fences and the damage to crops caused by other people's cattle. Trespassing
[731] animals were killed for food during the severe winter that followed the poor harvest. Some household heads wanted no more of reserva-

1 [i.e. Reservation M. Nahuelpan – ANALYST]

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(*murke*) set out for the workers while they take breaks from their labors. Women tend to remain at home on these occasions, unless they have been invited by the host's wife to assist in the preparation of the meal. They do not make contributions of food, but they serve the men when they take their noon meal and, if the work lasts until late evening, help with a second meal.

Repair of the communal roads is usually organized by a chief and participated in by most of the males of the reservation. This also applies to draining swampland, if a large part of the reservation is affected. Small-scale drainage operations might involve only a few families, in which case the chief qua chief takes no part. The participation of a chief in all of these matters implies some organizational or managerial activity, but is most important in symbolizing the importance of the work group. The chief seldom performs a full day's work along with the others, although he may work for a short period and usually provides a team or two of oxen if they are needed. The chief also contributes some food and drink, but usually a large meal is not required, and the workers take their main meal at home.

Most threshing is done by machine today and *mingaco* arrangements are rarely encountered in this activity. This machinery is generally rented from the same entrepreneur who owns the harvesting equipment. However, in some parts of Araucanía machines do not have easy access to Mapuche reservations owing to poor roads and rugged terrain. Horse threshing and sometimes ox threshing still occur, therefore, especially in the remoter parts of the indigenous zone, such as around Lake Budi and in parts of the Andean foothills. Animal threshing and even hand-flail threshing are resorted to when certain crops are grown in small amounts, or when harvests are very poor. Grains are almost always machine-threshed if it is possible to haul them by cart to a stationary machine, but peas and beans are not raised in large enough quantities to make this worthwhile. As late as twenty years ago in the now heavily mechanized Temuco region machines were rare and large *mingacos* were held for harvesting and threshing wheat and oats, the principal cereal crops grown. Sometimes, instead of animals, people trampled the stacks of grain, couples dancing to the sibilant tone of the *pifülka* and traditional Mapuche songs.

Mingacos are still frequent today, although they tend no longer to be held in connection with the major harvesting and threshing operations in most of Araucanía. They are characteristically made up of

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464 only by Mapuche who have very large holdings. The paid crews that
24 work the harvesting and threshing machinery of the Chilean entre-
[498] preneur are composed of both Mapuche and Chileans, who accompany the machines in their slow peregrinations throughout the rural districts surrounding the towns.

243 Mechanization has taken hold in the reservation areas. All the
427 larger and better-equipped *fundos* have harvesting and threshing
[409] machinery for hire and there are harvesters and mobile threshers that make a tour of the countryside wherever the roads permit. As the wheat and oats ripen, the machines are already busy in the more favored parts of the Central Valley. The Mapuche await them as they pass from one reservation to the next, with a feeling of exuberant expectancy. It is common for a man to walk a mile or more to watch the machine harvest the first fields in the vicinity and to examine the thresher carefully even when it is not in operation.

Eventually the harvester reaches one's fields. It is manned by a single operator and drawn by a double yoke of oxen, also owned by
[407] the entrepreneur. Part of the equipment consists of high, cribbed carts, also ox-drawn, which are pulled alongside the harvester to receive the wheat as it is pulled up the conveyer belt.

The Indians themselves provide the animals which draw these carts and they participate in the labor, inasmuch as they guide the carts and pitch the wheat into a huge pile where it stands until thresh-
[476] ing time. This operation is often done on a *vuelta mano* basis, since a single family seldom has sufficient oxen for the work.

[465] The machine operator is not paid by the owner of the crop immediately after his work is done, since payment is made in bags of grain and must await threshing. The family, however, invites him to a meal after his work is finished.

[407] Soon the thresher comes, pulled by a tractor which is later used to power the drive wheel of the machine after it has been set up alongside the stack of wheat. The machine is generally operated by a trained crew of about half a dozen men who are supervised by the owner of the equipment or his representative. None of the local Indians assist with the threshing, there is no *vuelta mano*, and the fam-
[461] ily itself has nothing to do except watch. *Murke* is set out for the
[273] workers to drink while they are engaged in feeding the thresher. After the grain is threshed, the workers and the owner are generally
[262] fed a good meal, possibly goose or pork, and are given a lot of *chicha* or *murke* to drink. After the workers have moved on, the family con-

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tinues to celebrate, sometimes by eating and drinking late into the night.

Twelve per cent of the bags of harvested grain are paid to the owner of the machinery, 10 per cent for the harvesting and an additional 2 per cent for the threshing. Not only is this more than the Mapuche can ordinarily afford when harvests are poor, as they generally are compared to provincial averages, but machine harvesting is less thorough than hand labor. As a result, fields are often gleaned in a separate operation, usually by children of the family who then hand thresh the spikes they collect in this way. Machine operations effectively eliminate any need for *mingaco*, although *vuelta mano* is often engaged in during the harvesting period. The air of festivity lingers, nevertheless, and the workers are feasted, albeit not with as great expenditure of food as *mingaco* entails. The integrative aspects of community-wide harvesting have largely gone by the board in recent times, as the Mapuche are becoming increasingly involved in the larger framework of provincial agrarian economics. The chief's and the community's traditional role in harvest-season activity are being bypassed, and the individual Mapuche farmers are gearing their harvest operations to the schedule of outside entrepreneurs.

LAND AND THE CONCEPT OF OWNERSHIP

Insofar as most movable goods are concerned, ownership is figured in traditional ways, even to the accommodation of nontraditional possessions such as farm machinery. In general, material items used by men are owned by men and pass along to males through patrilineal inheritance. Cattle may be owned by either sex and may be disposed of freely. The traditional way in which land passes along lineage lines will be discussed in some detail in a later chapter, as will the reservation-period innovation whereby registered women may exercise claims to reservation land. In this section we will be concerned more with "notions" about land and their implications, rather than with inheritance practices per se.

There are two main concepts regarding land that coexist on the reservations. One is the traditional concept of usufructuary rights and the other is the newer notion of private ownership. All indications are that the notion of private ownership of farmland is growing stronger. It is being reinforced in a number of ways, not least of which is through the expansion of the economic and political struc-